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ZOOLOGY.

Zoology of the Lower Saskatchewan River.—Prof. C. C. Nutting's report on Zoological Explorations on the Lower Saskatchewan River is condensed statement of a large amount of information. The expedition was sent out by the Iowa State University, with the primary object of getting a series of birds in summer plumage, and also the downy young. Prof. Nutting, however, got all he could in all directions. Much of the interest of the report lies in the descriptions of the habits of the various animals, either as observed by the party themselves, or told them by the hunters of that region.

In speaking of the geography of the country explored, Mr. Nutting refers to the water system as comparable in extent to that of the Mississippi River. From the Saskatchewan River to the Polar Sea is one inextricable maze of lakes, rivers and marshes, one of the greatest palustral regions in the world, perhaps, and the breeding place of most of our migratory birds.

The region is one of unusual zoological interest, being to a certain extent characterized by an intermingling of eastern and western, arctic and temperate faunæ. The whole region is covered with dense forests of conifers and poplar. The formation is Upper Silurian, and the principal paleontological feature is *Pentamerus decussatus* of which a fine series was secured.

The birds collected, numbering 104 species, were the summer residents of that region, of which 90 per cent are birds included in the avifauna of Iowa.

In regard to the migration of birds, the view held by the writer is that the impulse to migrate comes *from without* and the act is a *conscious* seeking for a more suitable clime, on the part of the adults at least, the young simply following or imitating their elders. There is much to indicate that this stimulus comes in the form of *the wind*.

Only a fragmentary list of the mammals is given. One snake was found, also three frogs and five fishes; but a large number of insects and molluscs were secured. (Bull. Lab. Nat. Hist. Iowa State University Vol. II, No. 3, 1893).

Zoological News. General.—A correspondent of The Naturalist has communicated a curious fact to that Journal. Along the estuary of the Humber River an excavation has been made in a quarry

into which the water of the estuary overflows but cannot return to the river. This water is brackish and contains a few sea fish, among which are some whitebait and herring. These fish thrive and reproduce themselves, but are reduced in size and are gradually forming a dwarfed species, especially the herring. These brackish water fish could easily be utilized for pisciculture. Mr. Yarrel reports that the whitebait adapts itself to fresh water where it grows and multiplies almost as well as in the sea, furnishing a table fish which for size and flavor is not surpassed by its salt water relatives. (*Revue Scientifique* June, 1893).

Invertebrata.—Dr. J. G. de Man has recently published in quarto form full descriptions of 129 species of Decapods found in the Indian Archipelago. Among them the author notes 27 new species and 9 new varieties. They are all classified under 50 genera. Fourteen plates, and a table showing the geographical distribution of the fresh water species accompany the paper. (*Zool. Ergeb. einer Reise in Niederl. Ost. Indien*, Zweiter Bd., Leiden, 1892).

According to Dr. M. Weber 112 species of fresh-water crustaceans have been found in the Indian Archipelago, of which 83 are Decapoda, 10 Isopoda, 6 Ostracoda, 5 Cladocera, 4 Amphipoda, 2 Copepoda, 1 Branchiura and 1 Branchiopoda. (*Zool. Ergeb. einer Reise in Niederl. Ost. Indien*, Zweiter Bd., Leiden, 1892).

Vertebrata.—Mr. J. A. Allen reports 17 mammals and 162 birds collected in northeastern Sonora and northwestern Chihuahua, Mexico, on the Lumholtz Archeological Expedition 1890–92. Of the birds 12 species occur as resident birds within 150 miles of the southern border of the United States. (*Am. Mus. Nat. Hist.*, March, 1893).

A summary of the species of Reptiles and Batrachians of Wisconsin published by Prof. W. K. Higley gives Lacertilia 4, Ophidia 22, Testudinata 13, Anura 8, and Urodela 12. Among the turtles is mentioned *Macrochelys lacertina*, the Loggerhead Snapper which the author says is occasionally found in the Mississippi River as far north as the mouth of the Wisconsin. (*Wis. Acad. Sci. and Arts*, Vol. VII).